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Commentary

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**The Health Papers**

# Will the Baby Boomers Bust the Health Budget?

## *Demographic Change and Health Care Financing Reform*

William B.P. Robson

***In this issue...***

*The pressure of aging populations on provincial health care budgets represents a massive fiscal liability. Reforming federal-provincial transfers and pre-funding some future costs related to seniors' health care could help Canadians meet this demographic challenge.*

## *The Study in Brief*

Over the next 40 years, an aging population will put upward pressure on provincial health care budgets in Canada, pressure that will be felt unevenly across the country. To gauge the size of the demographic challenges, this study combines population projections with figures for public health care spending by age group. With assumptions about output, servicing intensity, and prices, this exercise allows health care budgets to be projected relative to provincial gross domestic products (GDPs) and government revenues. In present value terms, the projections show increases from current levels — implicit health care liabilities comparable to more familiar figures for public sector debt — that amount to $530 billion, more than 50 percent of Canada's present GDP. For several provinces and territories, the liability exceeds 60 percent of current GDP, a sign of prodigious fiscal pressure in the coming decades.

The pressure of health care on provincial budgets presents a conundrum. *Ad hoc* bailouts of fiscally weaker provinces by Ottawa would be problematic. Such transfers encourage provincial decisionmakers to focus their attention on Ottawa rather than on their own health care systems. They also encourage immediate spending of new money, fiscal imprudence that adds to the intergenerational burden of Canada's publicly funded health care system.

A better alternative would be to transform part of the Canada Health and Social Transfer (CHST) into a payment calculated on a per-person-over-age-65 basis. Such a "seniors health grant" could address the incentive problem, automatically supplementing provincial budgets as their populations age. And pre-funding it through a "seniors health account" could reduce the cost of the baby boomers' health care to the next generation.

The study illustrates these proposals with a seniors health grant set initially at $3,000 per senior. With offsetting decreases in other CHST payments, the new grant would leave total federal-provincial transfers unchanged at first. As the senior population grows, however, the grant would transfer about one-third of the implicit health liability from the provinces to Ottawa. Pre-funding the additional amount along lines similar to those of the Canada Pension Plan would involve annual investments starting at $6.7 billion — well below projected federal budget surpluses.

A seniors health grant partially pre-funded through a seniors health account would put publicly funded health care in Canada on a more sustainable footing, better positioning Canadians to deal with the challenge an aging population poses to their health care system.

## *The Author of This Issue*

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The appetite of Canada's publicly funded health care system for resources is prodigious. During the mid-1990s' years of fiscal restraint, cuts — first to federal transfers and then to provincial health care budgets — inspired widespread concern. More recently, with government finances in better condition, health budgets have grown rapidly again, and the pressure to spend more is intense.

Despite the relief occasioned by the federal-provincial agreement on health care funding in September 2000, concerns about the health care system's use of resources will be a fact of life for decades to come. Aside from the many social and technological pressures to spend more, the baby boomers are aging. Older people consume more health-related goods and services than younger people, and the proportion of the former will grow sharply in the decades ahead. Conversely, younger people work more and pay more taxes than older people, providing the bulk of the resources for government health care provision, but working-age Canadians will be relatively scarce. With health care budgets already rising rapidly, many people wonder how long current patterns of provision can persist. This *Commentary* looks at this prospect, measures the size of the challenge, and outlines financing reforms that could help deal with it.

The first part of the paper combines population projections with recent data on provincial health care spending by age and sex.[1] On the basis of some simple assumptions about future rates of service utilization and cost increases, it outlines the size of the fiscal challenge.

One key conclusion is familiar: demographic changes will exert steady pressure on health care budgets. In the main scenario I examine, the share of the population age 65 and over goes from its current 13 percent to more than 18 percent by 2020 and to 25 percent by 2040, while the number of seniors per 100 working-age people rises from 18 percent to 28 percent and then to 41 percent. Overlaying age-specific utilization rates for provincially funded health goods and services on these population figures allows projections of demographically driven changes to provincial health budgets.

If real (inflation-adjusted) output per person of working age rises over the next four decades at the same rate recorded from 1980 to 2000, then provincial health care spending grows from an estimated 6.1 percent of Canada's gross domestic product (GDP) in 2000 to 7.4 percent by 2020 and 10.0 percent by 2040. If provincial own-source revenue remains at current levels relative to provincial GDPs, the share absorbed by health care spending rises from 35 percent in 2000 to 42 percent in 2020 and 57 percent in 2040. Expressing either increase — over the current share of GDP or over the current share of own-source revenues — in dollar terms and taking its present value over a 50-year period yields a useful measure of the liability represented by higher health care spending: $530 billion, equal to 52 percent of current GDP.

Less well known is that different provinces will feel these pressures to markedly different degrees. The projections show that if provincial own-source revenues stay

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1 For the sake of conciseness, the terms province and provincial in this paper often refer to both provinces and territories. Because of data limitations, the Northwest Territories and Nunavut are discussed together throughout the paper.

constant as shares of provincial GDPs, health care spending equals or exceeds own-source revenues by 2040 in Newfoundland and the territories. The Maritime provinces register figures in the 75 to 85 percent range.[2] Saskatchewan[3] and Alberta fare relatively best by this measure, with health care spending taking about half of own-source revenues in 2040. Implicit health care liabilities are less than 50 percent of current GDP in Ontario and the Prairies, 60 to 70 percent in the Maritime provinces and British Columbia, and 80 to 90 percent in Newfoundland and the territories.

These projections are naturally sensitive to the assumptions underlying them, so I examine three alternative scenarios. Perhaps the most realistic — a decade of relatively rapid increases in both servicing intensity and relative prices, followed by a decade of retrenchment during which both are reined in to match increases in the broader economy — tells a more awkward story: a national implicit health care liability of about 80 percent of current GDP, with provincial figures ranging from 50 to 75 percent in Ontario and the Prairies to about 100 percent or more in the Atlantic region, British Columbia, and the territories.

Although these numbers are daunting, they are the result of mechanical projections that neglect the changes in behavior such pressures will induce. The possible responses are many, some more promising than others for Canadians' future health. Unfortunately, the existing system of federal-provincial transfers creates a difficult environment for many reforms, a conundrum explored in the second half of this *Commentary*.

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One danger is that, as provinces get into trouble one by one, the federal government will make repeated *ad hoc* deals for enriched transfers, creating incentives that discourage longer-term reform. Federal-provincial entanglement blurs accountability for the delivery of health services and creates incentives for provincial policymakers to focus not on managerial and market reforms to health care delivery but on spending new federal money rapidly so as to bolster their case for yet more.

A second danger is that governments will react to the prospect of prolonged aging-related pressure on health care budgets by sticking with a pay-as-you-go approach that will place on the next generation a disproportionate share of the burden of caring for the elderly baby boomers. Such an approach is neither sensible nor defensible. Quantifying increased health care spending in present-value terms, like other fiscal liabilities, draws attention to the desirability of preparing for larger budgets in the longer term by saving more in the near term.

The paper therefore concludes by proposing a pair of reforms to the federal-provincial transfer system that would address both problems. It recommends that the federal government forestall serial *ad hoc* moves by restructuring part of the Canada Health and Social Transfer (CHST) as a "seniors health grant" that would allocate new money to the provinces in proportion to the growth in their populations age 65 and over. If the new grant were set at $3,000 per senior in 2002 and escalated with nominal GDP thereafter and if other federal-provincial transfers stayed constant as shares of provincial GDPs, it would transfer some $185 billion of the $530 billion implicit health care liability to the federal government. The paper also recommends pre-funding the

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2 The assumption here, discussed further below, is that federal equalization payments grow in line with recipient provinces' GDPs.

3 The heavy weight of aboriginal people in Saskatchewan's younger population does, however, raise important questions about the implications of these projections for its health care budget, a qualification noted further below.

**Table 1:** ***Provincial Health Care Spending, 1980 and 2000***

| | Relative to GDP | | Relative to Provincial Revenue | | Relative to Provincial Own-Source Revenue | |
|---|---|---|---|---|---|---|
| | 1980 | 2000 | 1980 | 2000 | 1980 | 2000 |
| | | | (%) | | | |
| Canada | 5.0 | 6.1 | 27.4 | 29.9 | 35.2 | 34.5 |
| Newfoundland | 7.9 | 9.5 | 23.6 | 28.8 | 46.3 | 52.8 |
| Prince Edward Island | 7.4 | 7.9 | 23.8 | 26.9 | 51.1 | 43.3 |
| Nova Scotia | 6.2 | 7.3 | 27.0 | 29.5 | 51.9 | 44.8 |
| New Brunswick | 5.9 | 7.4 | 24.5 | 25.7 | 43.7 | 36.9 |
| Quebec | 6.5 | 6.5 | 30.4 | 26.7 | 40.9 | 31.1 |
| Ontario | 4.4 | 5.5 | 30.9 | 33.8 | 38.1 | 36.7 |
| Manitoba | 5.3 | 8.2 | 29.5 | 33.9 | 48.7 | 44.8 |
| Saskatchewan | 4.9 | 6.5 | 23.2 | 29.7 | 26.9 | 35.6 |
| Alberta | 3.5 | 4.9 | 16.7 | 26.5 | 17.9 | 28.7 |
| British Columbia | 5.0 | 6.9 | 30.6 | 30.0 | 37.1 | 32.8 |
| Northwest Territories | 3.7 | 9.2 | 8.8 | 21.1 | 63.7 | 143.8 |
| Yukon | 3.2 | 7.0 | 11.1 | 15.3 | 28.8 | 46.6 |

Sources: Canadian Institute for Health Information 2000; Provincial Economic Accounts; National Income and Expenditure Accounts; and author's calculations.

incremental cost of the new grant in a "seniors health account." Like the Canada Pension Plan (CPP) account, the fund would build over the next two decades and appreciably lighten the burden that paying for the baby boomers will impose on the generation that follows them.

In short, the baby boomers present a sizable challenge to the sustainability of Canada's health care system. Reforms to federal-provincial transfers and pre-funding of easily foreseeable costs could, however, put Canada in better shape to deal with it.

## The Challenge

To get a grasp on the potential impact of demographic and other changes on provincial health spending in the future, it helps to start with a brief review of where we stand now.

### *Some Background Numbers*

Spending on health care is already a large part of provincial budgets (Table 1). In 2000, Canada's provinces and territories spent around $62 billion on it — more than $2,000 per Canadian. Expressed as a share of GDP, provincial health care spending ranges from 5 percent in Alberta to close to 10 percent in Newfoundland. Nationally, it stands at just above 6 percent of GDP, up roughly a percentage point from two decades ago.

Provincial health care spending equals one-fifth or less of revenue in the territories, about one-quarter in New Brunswick, Prince Edward Island, Quebec, and Alberta, and about one-third in Ontario and Manitoba. On average across the country, provincial spending on health care stood at just less than 30 percent of revenue, a ratio that has risen nearly everywhere over the past 20 years.

Because provinces depend to different degrees on federal transfers, comparing health care spending with provincial own-source revenues yields a different picture. Spending on health care amounts to barely more than 30 cents of every dollar of own-source revenue in Quebec,[4] but about 50 cents of every own-source dollar in Newfoundland, with the territories, which depend on Ottawa for the bulk of their spending, recording higher amounts. Across the country, average provincial health care spending absorbs a little less than 35 percent of own-source revenue.

Concern over the impact of demographic change on health care spending has a compelling basis: public expenditure on health-related goods and services varies markedly by age group. On average, provincial health care spending on people age 65 and over is some 5.4 times greater per person than that on people under 65 (see Figure 1).[5]

## *A Base-Case Projection*

This background in hand, it is time to look ahead. The figures on each province's health care spending by age and sex can be combined with projections of future population to get estimates of the impact of demographic change. Making some assumptions about future servicing intensity, relative price and cost increases, and economic growth allows projections of health care spending relative to provincial economies and provincial budgets.

For a base-case projection, it is easiest to consider demographic changes first, then ask how quickly consumption of health-related goods and services will grow relative to overall output, and finally look at relative cost factors.

### Demographics

Demographic projections require key assumptions about many variables — fertility, mortality, immigration, and emigration — whose future trends are uncertain. Thus, it seems sensible to adopt a base case that is relatively straightforward. Briefly, the projections here[6] assume that:

- Fertility rates in each province and territory remain at 1997 levels through the period.
- Age-specific mortality rates decline at the same rate they fell from 1971 to 1991.
- Annual immigration to Canada and emigration from it and the distribution of immigrants and emigrants among provinces are the same relative to resident populations as they were, on average, from 1991 to 1999.

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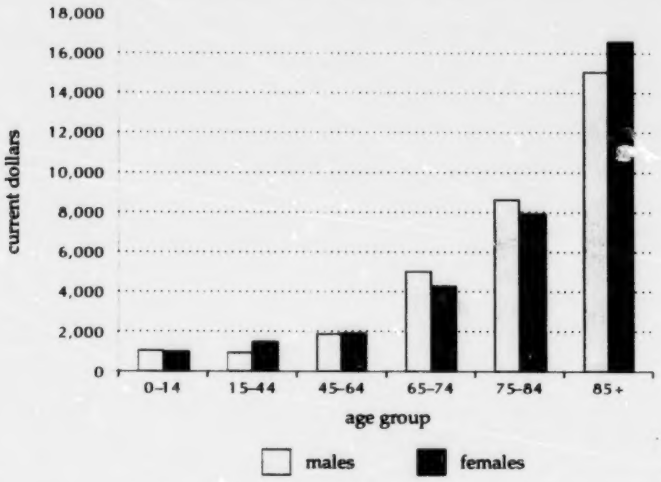
4 One reason for Quebec's relatively low spending relative to own-source revenue is that Quebec receives tax room in lieu of part of the support that other provinces receive from the federal government through the CHST.

5 This ratio varies from province to province. Relative per person spending on the age-65-and-over group is highest in Newfoundland and Nova Scotia, where the ratio stands at about 6.0, and lowest in Saskatchewan, where it is 4.6.

6 These projections were produced using PMEDS-D, software developed at the Research Institute for Quantitative Studies in Economics and Population at McMaster University (see Denton, Feaver, and Spencer 1997). More complete details about the projections appear in the Appendix.

**Figure 1: Provincial *Health Care Spending by Age and Sex, Canadian Average, 2000***




Sources: Canadian Institute for Health Information 2000; author's calculations.

- Net interprovincial migration goes, in equal annual steps, from the figure for 1999 to zero over five years and stays there thereafter. This assumption avoids presumptions about migration in response to (among other things) fiscal trends that differ from province to province.[7]

Some key results of these projections are summarized in Table 2. Low fertility and relatively low immigration from abroad yield shrinking populations in the Atlantic region after 2020. Ontario and British Columbia show increases of about one-third over the entire 2000–40 period, thanks to immigration, while relatively high birth rates in the prairies also yield some gains in those provinces. Even with support from immigration, however, national population slows during the 2020–40 period and virtually ceases by the end of the projection.

Growth in the working-age population (ages 15 through 64) is, on average, even more subdued, with the interprovincial pattern showing an intensified variation on the pattern of overall population growth. From Quebec eastward, the group stagnates at best and, in some cases, shrinks substantially over the entire projection period. From Ontario westward, the working-age population grows over the next two decades.[8] In the 20 years after that, however, it stagnates or shrinks almost everywhere.

When the focus shifts to the older population, the general story is, unsurprisingly, of large increases, as the bulge of the baby-boom generation passes the age 65 mark.[9] Interprovincial variations in the growth of the senior group are also considerable. In provinces where the baby-boom bulge is relatively small, the population of seniors does not quite double between 2000 and 2040; in provinces where the bulge is larger, the increase is in the order of 150 percent or more.

A convenient way of summarizing the implications of these cross-currents in various provinces is to calculate the ratio of the senior to the working-age population, as in Figure 2. Nationwide, that ratio will more than double by 2040. The prospects for Ontario, Quebec, and British Columbia are in line with those for the country as a whole,

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7 For both international and interprovincial migration, the age and sex distribution of migrants is held the same throughout the projection period as it was from 1992 to 1997.

8 The impression of a relatively benign outlook for Saskatchewan may be misleading. The province's relatively high birth rate largely reflects rapid growth of the aboriginal population. The registered-Indian share of Saskatchewan's population is currently about 10 percent but could rise to about 25 percent by the end of the projection period. The aboriginal population pays relatively little tax, making the rapid growth in Saskatchewan's working-age population less helpful to the provincial budget than it might appear. I am grateful to Tom McIntosh of the Saskatchewan Institute for Public Policy for data on and discussion of this point.

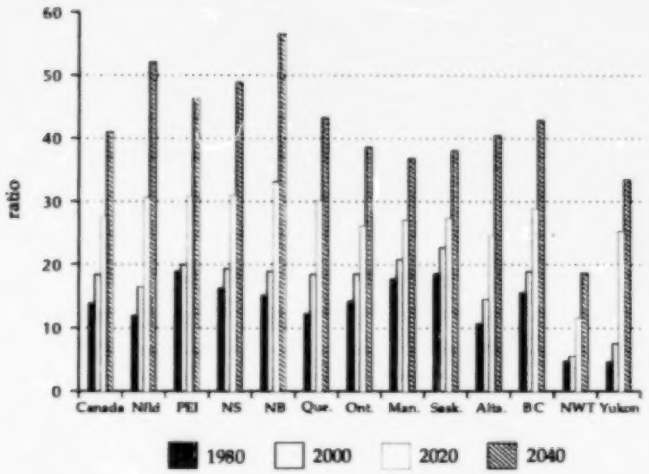
9 Dating the baby boom is somewhat arbitrary, but the peak in the number of births nationwide occurred in 1959, and the birth rate tailed off rapidly after that date. Therefore, it seems reasonable to say that all the baby boomers will have passed retirement by 2030.

**Table 2:** ***Population by Province, 1980–2040***

| | Total | | | | Change | | | |
|---|---|---|---|---|---|---|---|---|
| | 1980 | 2000 | 2020 | 2040 | 1980–2000 | 2000–20 | 2020–40 | 2000–40 |
| | *(thousands)* | | | | *(percent)* | | | |
| | | | | *A: All Ages* | | | | |
| Canada | 24,516 | 30,758 | 35,242 | 37,354 | 25 | 15 | 6 | 21 |
| Newfoundland | 573 | 538 | 528 | 449 | –6 | –2 | –15 | –17 |
| Prince Edward Island | 124 | 139 | 145 | 137 | 12 | 5 | –6 | –1 |
| Nova Scotia | 853 | 943 | 974 | 912 | 11 | 3 | –6 | –3 |
| New Brunswick | 706 | 756 | 751 | 665 | 7 | –1 | –11 | –12 |
| Quebec | 6,507 | 7,378 | 8,015 | 8,075 | 13 | 9 | 1 | 9 |
| Ontario | 8,745 | 11,658 | 14,028 | 15,634 | 33 | 20 | 11 | 34 |
| Manitoba | 1,035 | 1,149 | 1,267 | 1,322 | 11 | 10 | 4 | 15 |
| Saskatchewan | 967 | 1,031 | 1,124 | 1,161 | 7 | 9 | 3 | 13 |
| Alberta | 2,192 | 3,015 | 3,483 | 3,598 | 38 | 16 | 3 | 19 |
| British Columbia | 2,743 | 4,051 | 4,800 | 5,250 | 48 | 19 | 9 | 30 |
| Northwest Territories | 46 | 70 | 96 | 122 | 52 | 36 | 27 | 74 |
| Yukon | 24 | 30 | 31 | 29 | 22 | 4 | –5 | –1 |
| | | | | *B: Ages 15–64* | | | | |
| Canada | 16,636 | 21,021 | 23,339 | 22,790 | 26 | 11 | –2 | 8 |
| Newfoundland | 358 | 382 | 353 | 265 | 7 | –8 | –25 | –31 |
| Prince Edward Island | 78 | 93 | 93 | 81 | 19 | 0 | –13 | –13 |
| Nova Scotia | 559 | 646 | 640 | 539 | 16 | –1 | –16 | –17 |
| New Brunswick | 458 | 522 | 488 | 377 | 14 | –6 | –23 | –28 |
| Quebec | 4,527 | 5,110 | 5,248 | 4,877 | 13 | 3 | –7 | –5 |
| Ontario | 5,962 | 7,919 | 9,381 | 9,657 | 33 | 18 | 3 | 22 |
| Manitoba | 672 | 753 | 817 | 806 | 12 | 9 | –1 | 7 |
| Saskatchewan | 614 | 659 | 716 | 700 | 7 | 9 | –2 | 6 |
| Alberta | 1,499 | 2,081 | 2,337 | 2,196 | 39 | 12 | –6 | 6 |
| British Columbia | 1,864 | 2,789 | 3,183 | 3,195 | 50 | 14 | 0 | 15 |
| Northwest Territories | 29 | 46 | 62 | 77 | 60 | 35 | 23 | 67 |
| Yukon | 17 | 22 | 21 | 19 | 27 | –6 | –8 | –13 |
| | | | | *C: Ages 65+* | | | | |
| Canada | 2,306 | 3,856 | 6,454 | 9,329 | 67 | 67 | 45 | 142 |
| Newfoundland | 43 | 63 | 108 | 138 | 47 | 72 | 28 | 120 |
| Prince Edward Island | 15 | 19 | 29 | 38 | 26 | 56 | 31 | 103 |
| Nova Scotia | 90 | 125 | 198 | 263 | 38 | 58 | 33 | 110 |
| New Brunswick | 69 | 99 | 162 | 213 | 43 | 64 | 32 | 116 |
| Quebec | 555 | 943 | 1,584 | 2,110 | 70 | 68 | 33 | 124 |
| Ontario | 850 | 1,469 | 2,450 | 3,727 | 73 | 67 | 52 | 154 |
| Manitoba | 119 | 156 | 221 | 297 | 31 | 41 | 34 | 90 |
| Saskatchewan | 114 | 150 | 196 | 266 | 32 | 31 | 36 | 78 |
| Alberta | 160 | 303 | 574 | 887 | 90 | 90 | 54 | 193 |
| British Columbia | 289 | 526 | 919 | 1,369 | 82 | 75 | 49 | 160 |
| Northwest Territories | 1 | 3 | 7 | 14 | 86 | 188 | 99 | 472 |
| Yukon | 1 | 2 | 5 | 6 | 109 | 219 | 21 | 286 |

Sources: Statistics Canada, CANSIM database; PMEDS-D (see note 6).

**Figure 2:** ***Population Age 65+ per 100 of Working Age, Canada and the Provinces, 1980–2040***




Sources: Canada, Statistics Canada, CANSIM database; PMEDS-D (see note 6); author's calculations.

while the Atlantic region and Alberta show sharper increases, and Manitoba and Saskatchewan — where the ratios are already relatively high — face milder ones. These differing demographic trends imply contrasting prospects for both the spending and revenue sides of provincial budgets.

## Servicing Intensity, Productivity, and Prices

Getting estimates of the demographic pressure on health care budgets requires overlaying current patterns of spending per person by age and sex on these projections, as well as making some further assumptions.

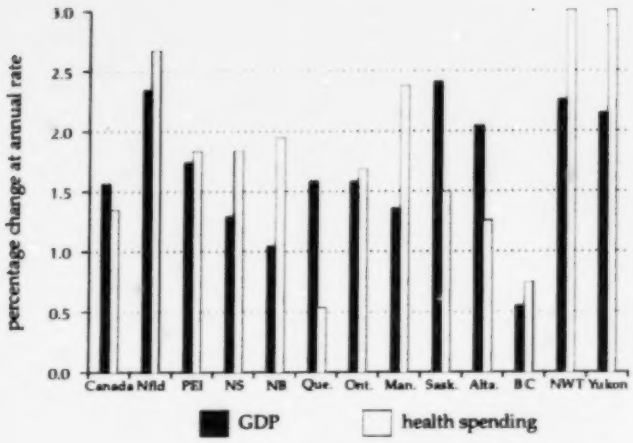
One key question is how rapidly real per person consumption of provincially funded health-related goods and services will rise for reasons other than demographic change. Looking at past trends in real health care spending for clues about the future might appear straightforward, but the problems of adjusting for improvements in quality that complicate all price-index calculations are particularly acute in the health care sector, and no reliable indexes of price changes exist. Using price deflators for all government consumption as a proxy (as in Canadian Institute for Health Information 2000) tells us that the average national increase in real spending per person, adjusted for the changing age composition of the population, has averaged some 1.3 percent annually since 1980, with the bulk of the increase occurring between 1980 and 1990, and much more subdued increases since then.[10] But even if such numbers are reliable measures of real changes in goods and services provided, they are not straightforward guides to the future, being the product of many forces, such as technological developments and province-specific fiscal pressures, that will doubtless differ from what they were in the past.

A second key question is how rapidly provincial economies will grow. Again, it is natural to look to the past for guidance. Nationally, increases in real output per person of working age have averaged 1.6 percent annually since 1980. Provincial experience has varied, although to a lesser extent than in real health care spending. Figure 3 shows the province-by-province growth in real GDP per person and the estimated increases in real per person (age-adjusted) spending on health care since 1980.

For a base-case projection, answering these two questions together is convenient. I assume that, before accounting for the impact of demographic change, real per person absorption of provincially funded health care goods and services would rise at the same rate as real output per working-age person, and that those increases would occur at the

10 As noted in the Appendix, I made the adjustments for changing weights of age groups in the population on the assumption that the relative per capita expenditures in each group are the same in each year, past and future.

**Figure 3:** ***Real and Age-Adjusted Health Expenditures, per-Person Growth, 1980–2000***




Note: Real per person health cate spending (age-adjusted) rose by 4.7 percent and 3.8 percent annually in the Northwest Territories and Yukon. I truncated these values to avoid compressing the scale.

Sources: Canadian Institute for Health Information 2000; National Income and Expenditure Accounts; and author's calculations.

same 1.6 percent annual rate registered for output per working-age person over the past two decades.[11]

A final question is how fast the cost of provincial health-related purchases will rise relative to prices in the economy generally. As already noted, no price indexes provide reliable information about the split between changes in real health care consumption and costs. Using the deflators for provincial government purchases, as above, suggests that, on average, increases in health care costs have exceeded increases in prices generally since 1980, though again the difference was concentrated in the 1980s. For each province, Figure 4 shows changes in general price levels (as measured by the GDP deflator) and compares them with changes in the price of government consumption.

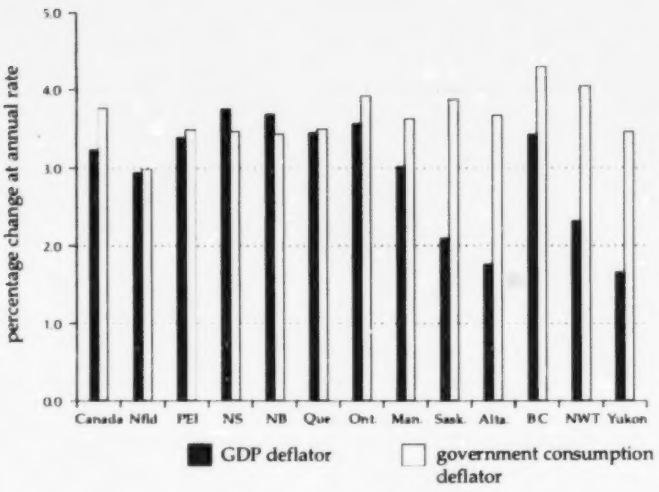
In a couple of provinces, public sector restraint appears to have held these costs below the rate of general inflation; in most others, inflation in the public sector outpaced general inflation throughout the past two decades. Projecting either of these tendencies indefinitely seems unwise for the base-case projection. Accordingly, I assumed — unimaginatively though still controversially — that future health-sector inflation will be in line with general inflation, averaging the 2 percent annual rise that the Bank of Canada targets for the overall price level.

## Health Care Spending and Provincial Budgets

What do these demographic projections and assumptions imply for the growth of provincial health budgets? To begin with, they suggest continued upward pressure on real provincial spending on health. The aging of the population combined with increases in servicing intensity drives up the volume of health-related goods and

11 Projecting on the basis of a summary indicator like GDP per working-age person is not uncommon — Canada's chief actuary makes a similar type of assumption in projecting long-term costs for the CPP and the Old Age Security (OAS) programs. Doing so abstracts rather brutally from some key questions about long-term growth. Slower labor force growth would, according to most long-run models, result in lower rates of capital formation and, to the extent that overall productivity improvements are linked to improvements in the stock of human and physical capital, in slower productivity growth as well (see King and Jackson 2000 for long-term fiscal projections that rest on a more sophisticated growth model). Focusing on the margin between growth in servicing intensity and growth in overall output avoids the need to dwell at length on these considerations, but at the cost of truncating consideration of the contrasts between the happier scenarios where both grow rapidly and the unhappier scenarios where both grow slowly. Focusing on real increases in age-adjusted health care utilization, King and Jackson examine scenarios where it grows at 0, 1, and 2 percent annual rates; the Provincial and Territorial Ministers of Health (2000, 29–37) assume 1 percent annual increases.

**Figure 4:** ***General Prices and the Deflator for Government Consumption, 1980–2000***




Sources: Canadian Institute for Health Information 2000; Provincial Economic Accounts; author's calculations.

services 86 percent nationwide by 2020 and more than triples it by 2040.[12]

How likely is it that provinces would actually deliver these higher volumes; would such increases produce stresses and strains much more serious than those we have already experienced? Over the past 20 years, real provincial health care spending increased by almost 90 percent, and we have coped. On further inspection, however, this cheerful view becomes troubled. With the working-age population growing less quickly or declining and real output per working-age person rising at only historical rates, the economic base for provincial health care spending would grow less robustly than in the past.

Over the past two decades, increasing volumes of provincially financed health care services have boosted the share of provincial health care spending in GDP by an average of 1.1 percentage points nationally. Slower economic growth in the future would mean that the shares of provincial GDPs absorbed by health care spending would rise faster. Figure 5 sketches the results of the projections. By 2020, the national figure rises by 1.3 percentage points to 7.4 percent of GDP. In several provinces — such as Newfoundland and New Brunswick — and Yukon Territory, the increase in the share of GDP absorbed by health care is 2.4 percentage points or more, dwarfing the increase since 1980. By 2040, the share of national GDP absorbed by provincial health care spending rises by almost two-thirds, with even the least-affected provinces of Manitoba and Saskatchewan seeing increases of more than one-third,[13] and the share for the most affected doubling.

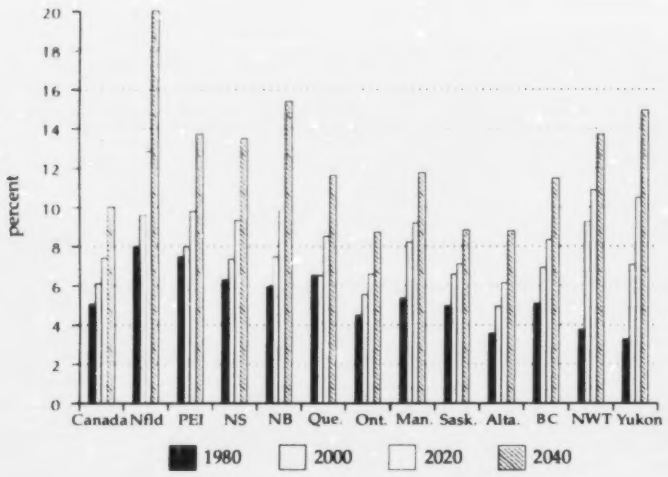
If total provincial revenues remain constant as shares of provincial GDP, the implications for provincial budgets are proportional to those just reviewed. On average across the country, health care spending rises by some 7 percentage points of provincial budgets by 2020 and by 20 percentage points by 2040. In the latter year, all but three provinces are spending more than 45 percent of their budgets on health care (Figure 6).

Relative to provincial own-source revenues — that is, revenue excluding federal transfers, which are assumed to grow in line with provincial GDPs — the figures are

12 About 40 percent of these increases reflect the changing age-structure of the population, and the rest increased servicing intensity. Projections using breakdowns of the population by age groups of 10 years or more are open to criticism for neglecting increases in spending as people move within these categories — for example, from the relatively inexpensive age 65 to the more costly age 74. In defense of this approach, one can argue that finer breakdowns would exaggerate the cost of aging as time goes by, since the population at each age will, on present evidence, be healthier than its predecessors.

13 As noted already, the relatively benign outlook for Saskatchewan may be misleading. The aboriginal population tends to have higher per person health expenditures than the nonaboriginal population and contributes relatively little to the tax base, both of which have adverse implications for the provincial budget.

**Figure 5:** ***Health Care Spending as a Share of GDP, Canada and the Provinces, 1980–2040***




Source: Author's calculations.

more alarming and the contrasts among the provinces starker. Across the country, the share of provincial own-source revenues absorbed by health care spending rises from today's level of 35 percent to 42 percent in 2020 and to 57 percent in 2040. Among the provinces that are relatively low recipients of federal transfers — those from Quebec[14] westward — the share of own-source revenue absorbed by health care spending in 2040 is in the 50 to 60 percent range. In New Brunswick, health care spending takes more than three-quarters of own-source revenue, in Nova Scotia, more than four-fifths, and in Newfoundland and the territories, it matches or exceeds own-source revenues (Figure 7).

Overall, the implications of demographic pressure upward on health care spending and downward on provincial revenues are not proportional across the country because the equalization program fills gaps in revenue for the "have-not" provinces when their tax bases decline. As noted above, the projections assume, somewhat simplistically, that equalization transfers, like other federal-provincial transfers, grow at the same rate as GDP.

## Quantifying the Liability

With concerns over unsustainable borrowing by Canadian governments fresh in memory, and debt-servicing costs that are still substantial, it is instructive to compare the increases in provincial health-related spending with another, more familiar measure of fiscal stress: net provincial debt.

Any baseline for such a calculation is open to objection, so to avoid charges of exaggeration, using a relatively generous one seems best. I therefore treat the current share of provincial GDPs — or, equivalently,[15] the current share of provincial own-source revenues — that flows through provincial health care budgets as a baseline. In other words, if health care spending's share of GDP or provincial own-source revenue stays constant, the implicit liability is zero. Any increase in spending beyond that level is, however, an additional liability that, when converted to a present value, can usefully be compared to other provincial debts.[16]

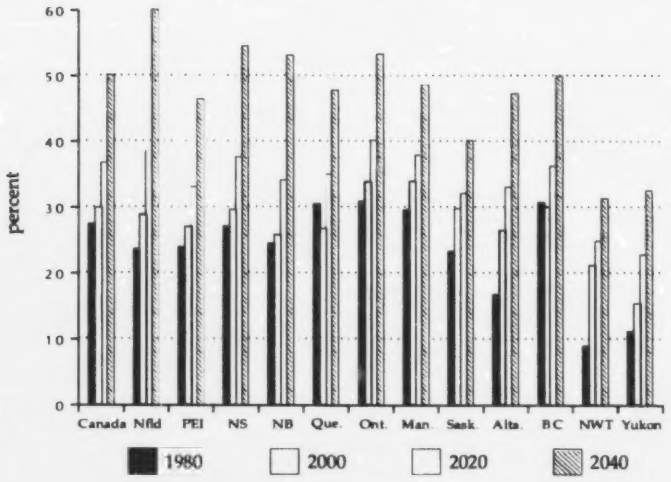
In view of the substantial share of GDPs and provincial revenues that health care budgets already command, this benchmark may appear generous. It nevertheless yields

14 Quebec is a relatively low recipient of federal cash transfers because of the tax points it receives in lieu of some CHST support.

15 Equivalently, as long as the provinces' own-source revenues are constant shares of their GDPs.

16 I measure the liability over a 50-year period since every living Canadian can be said to be the recipient of an implicit promise to receive public health care benefits along the lines that are now offered, and 50 years is approximately the average life expectancy of all living Canadians.

**Figure 6:** ***Provincial Health Care Spending as a Share of Total Revenue, 1980–2040***




Source: Author's calculations.

an unsettling result. Converting the dollar amounts by which future health care spending exceeds current levels into present values at 6 percent (approximately the current rate of interest on long-term government debt) gives a figure of $531 billion for the country as a whole. At a little more than 50 percent of current GDP, this liability is not far short of the federal government's net debt and roughly twice the aggregate net debt of the provinces.

The figures for the implicit health care liabilities of the individual provinces as shares of current provincial GDPs are shown in Figure 8, with ratios of provincial net debt to GDP shown for comparison. In virtually every case, even this relatively conservative measure of the present value of health care's future demands dwarfs the burden of ordinary public debt. A second perspective is provided by Table 3, which shows the implicit health care liability alongside provincial debts and two other important public sector liabilities, the net federal debt and the unfunded liabilities of the CPP and the Quebec Pension Plan (QPP), all expressed in dollars per person. The picture of Canadians' public sector balance sheet provided by these figures is considerably less cheerful with the implicit health liability included than it would be without it.

The differing degrees to which implicit health-related liabilities affect different provinces take on added significance in this context. While some provinces, such as Alberta and British Columbia, whose health care budgets face major pressures in the future are comparatively well-positioned to meet them, others are not. Newfoundland, in particular, stands out for its awkward position by both measures: adding provincial debt and the implicit health care liabilities together yields a hybrid debt-to-GDP ratio of almost 160 percent.[17]

## *Sensitivities*

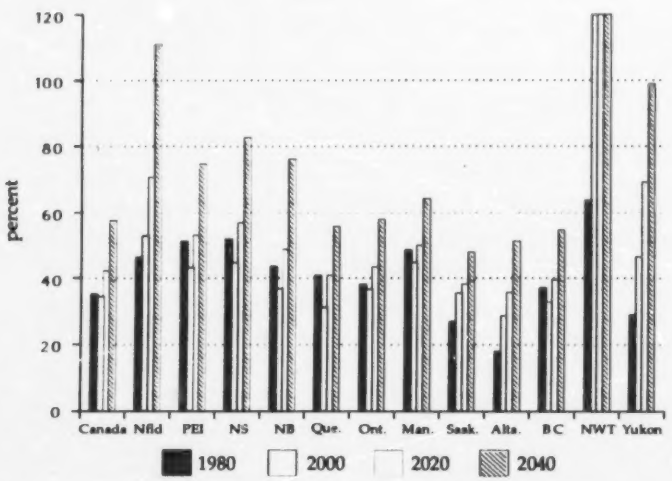
Projections of this sort are open to numerous uncertainties and objections. This subsection reviews some of them and provides some alternative scenarios.

### Demographics

Long-term projections are sensitive to many demographic assumptions, among them longevity, fertility, and migration patterns. The first two of these are interesting in their own right, but neither merits a detailed detour. Most scenarios in which changes in

17 Calculating a present value like this may appear arbitrary but, as discussed further below, it has a straightforward interpretation for fiscal policy. Ontario, for example, could allow health care spending to rise as projected while maintaining current tax rates over the average lifetime of its present population if it had a $190 billion nest egg yielding a 6 percent return to cover the difference.

**Figure 7:** ***Provincial Health Care Spending as a Share of Own-Source Revenue, 1980–2040***




Note: I truncated the figures for the Northwest Territories to avoid compressing the scale. The 2040 figure is more than 20 percent.

Source: Author's calculations.

future life expectancies differ from those of the past involve parallel trends in years of healthy life, so that improvements or declines in the health of older people offset much of the "bad" or "good" news for health care spending.[18] Scenarios in which people live longer in worse health are more aptly dealt with under the discussion of servicing intensity below. As for fertility, its impact on the projections is negligible before 2020 and, barring extraordinary movements or divergences among the provinces, not very significant after that.[19]

Changes in migration patterns, on the other hand, could affect the nearer-term results. The base-case projection assumes that net interprovincial flows decline linearly from their 1999 amounts to zero in 2004. This specification, while helpful for the sake of avoiding building strong assumptions about cyclically driven flows into longer-term projections, does differ sharply from recent experience.

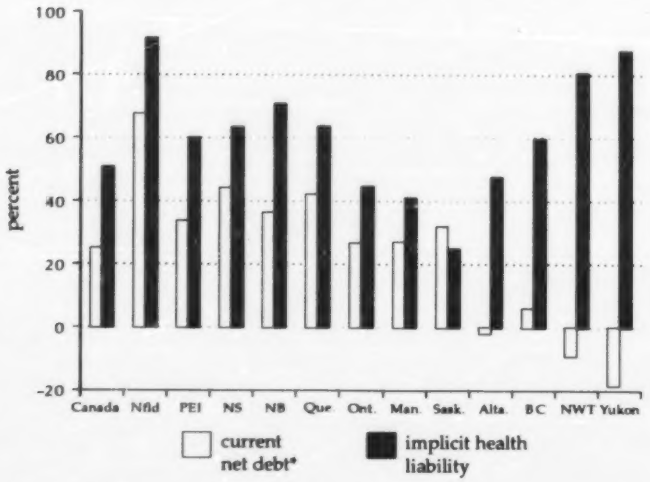
During the 1990s, interprovincial migration had a noticeable impact on the populations of several provinces. Newfoundland's annual net loss equaled almost 1 percent of its resident population, while Manitoba, Saskatchewan, and the territories had net losses equaling about 0.5 percent of their populations. Alberta and British Columbia, by contrast, gained about 0.5 percent annually. Because younger people are likelier to move from one province to another, a scenario with continued flows of people similar to those seen in the 1990s is more cheerful than the base case for the provinces that are net gainers and gloomier for the net losers.

An alternative projection in which annual movements of people continue on a 1990s' scale has the most profound impact on Newfoundland. Over the next two

18 In part, the larger per person amounts spent on older people simply reflect the fact that the bulk of the average individual's use of health care occurs toward the end of life, and most people are old when they die. An extreme alternative projection, not examined at length here, might assume that all the variation in age-specific per person health care spending arises from interventions near the end of life, in which case the ratio of deaths to working-age people is more pertinent for this analysis. The message conveyed by that projection is somewhat less alarming: nationwide, the "deaths ratio" rises by 90 percent by 2040 (compared with 120 percent for the seniors ratio). The deaths ratio is lower by similar proportions everywhere except the Northwest Territories, where the dramatic increase in the relative share of the elderly population from its current low level is not reflected in anything like as large an increase in the deaths ratio.

19 Among the provinces and territories, 1997 total fertility rates ranged from a low of 1.27 in Newfoundland to highs of 1.84 in Saskatchewan and 2.58 in the Northwest Territories. If, rather than staying at 1997 levels, provincial fertility rates converge to the 1997 national average by 2004 and stay there, provincial health spending in 2040 is 6 percentage points lower as a share of own-source revenue in Newfoundland and about 3 points higher in Manitoba and Yukon. The ratio is 18 percentage points higher in the Northwest Territories, but relative to the base-case figure of more than 200 percent, this difference is less dramatic than it appears.

**Figure 8:** ***Implicit Health Care Liability and Current Provincial Net Debt Relative to GDP***




* Financial Management System basis.

Source: Author's calculations.

decades, such outflows raise the share of seniors in Newfoundland's population in 2020 to more than 25 percent (from just under 20 percent in the base case), and the impact keeps growing over time: by 2040, continued out-migration brings the share of seniors in the population to 57 percent (it was 28 percent in the base case). Health care spending absorbs more than 80 percent of the province's own-source revenues by 2020 (as opposed to 70 percent in the base case). By 2040, health care spending is more than two-and-a-half times own-source revenues. The implicit health care liability, expressed as a ratio to current provincial GDP, is 20 percentage points higher than in the base case.

Continued out-migration also affects Manitoba and Saskatchewan, but less severely. By 2020, the share of health care spending in own-source revenues is roughly 2 percentage points higher in each of these provinces; by 2040, it is 8 to 9 points higher. The ratio of the implicit liability to current provincial GDPs is higher by some 7 to 8 percentage points.[20]

Because the provinces that experienced net in-migration during the 1990s are more populous, the impact on them of similar-scale future flows is more muted. The share of seniors in the populations of Alberta and British Columbia is a little more than 1 percentage point lower in 2020 and a little more than 2 percentage points lower by 2040. Translated into their effect on the share of own-source revenue absorbed by provincial health care spending, such flows improve the ratio for each of these provinces relative to the base case by a little more than 1 percentage point by 2020 and a little more than 4 percentage points in 2040. The implicit health care liabilities are lower by 2 and 4 percentage points of current GDP, respectively.

## Servicing Intensity, Productivity, and Prices

Starker yet in their budgetary implications are two other trends: growth in the consumption of health care relative to productivity in the broader economy, and increases in health care costs relative to general inflation.

Much commentary on health care speculates that servicing intensity will rise rapidly in the future. The baby-boom generation, whose experience with other goods and services has led it to expect quick and high-quality delivery, may resist rationing more than its predecessors (Decter 2000). Technological advances will render more conditions treatable and lower the threshold for interventions (Provincial and Territorial Ministers

20 It bears repeating that my calculations take no explicit account of the implications of a growing share of the population that is aboriginal for Saskatchewan's budget. If the aboriginal population continues to make a relatively small contribution to provincial tax revenues and nonaboriginals are disproportionately likely to leave, out-migration has a larger adverse impact on the provincial health care budget than is described here.

**Table 3:** ***Implicit Health Care Liability and Other Public Liabilities***

| | Health Care Liability | Provincial Debt[a] | Federal Debt[b] | Unfunded CPP/QPP Liability[c] | Total |
|---|---|---|---|---|---|
| | | *(current dollars per capita)* | | | |
| Canada | 17,300 | 8,400 | 18,400 | 19,900 | 64,000 |
| Newfoundland | 21,800 | 16,100 | 18,400 | 19,900 | 76,200 |
| Prince Edward Island | 13,800 | 7,800 | 18,400 | 19,900 | 59,900 |
| Nova Scotia | 15,900 | 11,100 | 18,400 | 19,900 | 65,300 |
| New Brunswick | 18,100 | 9,300 | 18,400 | 19,900 | 65,700 |
| Quebec | 18,700 | 12,400 | 18,400 | 19,900 | 69,400 |
| Ontario | 16,300 | 9,800 | 18,400 | 19,900 | 64,400 |
| Manitoba | 11,700 | 7,700 | 18,400 | 19,900 | 57,700 |
| Saskatchewan | 7,700 | 9,900 | 18,400 | 19,900 | 55,900 |
| Alberta | 20,000 | –800 | 18,400 | 19,900 | 57,500 |
| British Columbia | 18,500 | 1,800 | 18,400 | 19,900 | 58,600 |
| Northwest Territories | 35,700 | –1,500 | 18,400 | 19,900 | 72,500 |
| Yukon | 33,500 | –7,000 | 18,400 | 19,900 | 64,800 |

[a] Financial Management System basis.

[b] Public Accounts basis.

[c] The figure for Quebec assumes that the unfunded liability of the QPP is the same, in per capita terms, as that for the CPP, which probably understates the true situation. Although a growing economy and the 1998 federal-provincial reform package turned the CPP's cash flow positive in 1999, the QPP's cash flow remained negative in that year.

of Health 2000, 40–44), particularly in the area of pharmaceuticals. Information systems cost money to install and keep current, and their capacity for managing large amounts of data may bring to light new opportunities for treatment, increasing per person use of the health care system.

Forces are also working the other way. Technological advances may lower the ratio of inputs to outputs in health care as they do elsewhere, reducing the costs associated with, for example, invasive procedures and accidental drug interactions. Inasmuch as a consensus exists among observers, consumers, and policymakers, however, the risks lie in higher, rather than lower, servicing intensity. From 1980 to 1990, before the fiscal pinch, age-adjusted consumption of health care goods and services per person rose 0.8 of a percentage point annually faster than output per person of working age, which suggests what may come with the absence of fiscal pressures along 1990s' lines.

Suppose, for example, that, during the next 40 years, age-adjusted servicing intensity rises 0.5 of a percentage point faster than output per person. The upcoming decades, unsurprisingly, then present a more difficult prospect. Provincial health care budgets rise about a percentage point of GDP more than in the base case in each 20-year period, topping 12 percent nationally by 2040, with the Atlantic provinces and the territories in the high teens or more. Health care spending absorbs 47 percent of provincial own-source revenues by 2020 and 70 percent by 2040. Converted into a present-value liability, the higher health care spending is more than $830 billion nationwide and exceeds 90 percent of current GDP in eight provinces and territories.

Fewer factors are at play in considering the relative cost of delivering a given real level of health services. Again, however, to the extent one can talk of a consensus, it is that the risks are on the side of relative cost increases.

The remuneration of providers, either directly through fees to physicians and salaries to other professionals or through the budgets of hospitals and other institutions, makes up more than half of provincial health care spending. During the 1990s, governments held the line on these costs, scaling back fee schedules and resisting wage demands; the costs of all government-provided goods and services rose scarcely faster (0.2 of a percentage point annually) than those elsewhere in the economy. But it is hard to see such measures being sustained for decades. The exodus of Canadian health care professionals to the United States is already causing concern and, as already noted, the working-age population will grow more slowly from now on, tightening the labor market and raising relative costs in labor-intensive industries. In the 1980s, the costs of government-provided goods and services rose 0.9 percent annually faster than economy-wide inflation. A return to the previous pattern of faster cost increases within the government-funded health care sector than outside it is not unlikely.

*The exodus of Canadian health care professionals to the United States is already causing concern and the working-age population will grow more slowly from now on, tightening the labor market and raising relative costs in labor-intensive industries.*

If costs in provincial health care rise at a rate 0.5 percent faster than costs in the economy generally, the budgetary impact is the same as the 0.5 percent margin of servicing over productivity growth discussed above. The impact of both developments at once is, naturally, roughly twice as severe as a rise in relative service intensity or costs alone. Provincial health care budgets reach almost 15 percent of GDP by 2040, with Ontario, Saskatchewan, and Alberta, the lowest, registering about 13 percent, and five provinces topping 20 percent. And if — as is most unlikely under such conditions — provinces' own-source revenues take a constant share of their economies, health care swamps the rest of their budgets. It absorbs more than 50 percent of own-source revenue nationwide by 2020 and 85 percent by 2040; the differences in provincial exposures to higher health care spending already outlined are further accentuated. Expressed in present-value terms, the increased spending amounts to almost $1.2 trillion, and only Saskatchewan and Alberta have implicit liabilities equal to or smaller than their current GDPs.

Straight-line projections are unsatisfactory for many reasons. The past does not exhibit constant growth rates; all systems are dynamic; and costs will not indefinitely outrun the capacity to bear them without economic and political responses. Unfortunately, however, modeling behavior in market settings is difficult enough, and we are a long way from understanding how to model behavior in a command-economy setting such as Canadian health care.

For a rough cut at a more plausible scenario, imagine that, consistent with recent developments, the relaxation of fiscal tension gives rise to a prolonged period of enriched spending in the health care sector, followed by another period during which growth in servicing intensity and in relative prices are gradually reined in to match growth in the economy as a whole. For the sake of providing round numbers, suppose the first period is a decade, in which servicing intensity and costs annually rise 0.5 percent faster than overall growth and inflation, as described above, and suppose the second period is also a decade, in which the excess growth declines to zero in equal annual increments.

Projections using those circumstances yield provincial health care budgets that reach 8.5 percent of GDP by 2020 and 11.5 percent by 2040. With provincial own-source revenues constant as shares of GDP, health care spending absorbs almost half of them by 2020 and just less than two-thirds by 2040. The national implicit health care liability is $835 billion, with provincial figures ranging from one-half to three-quarters of current

GDP in Ontario and the Prairies to amounts roughly equal to current GDP in the Maritime provinces, Quebec, and British Columbia and about 130 percent of current GDP in Newfoundland and the territories.

Table 4 summarizes the results of these alternative scenarios and compares them with the base case.

## Policy Implications

To repeat, these projections are mechanical. Even if the data on which they rely were absolutely reliable (which they are not), new developments will change the links between age and health care spending, and policymakers will react in a variety of ways to the prospect of further increases in the demands health care spending makes on public revenues. Some of those reactions, such as seeking greater efficiencies in all areas of provincial budgets, are easy to predict and much to be desired. Others, such as seeking to boost economic growth, are also much to be desired, though difficult to achieve.

Another type of reaction is also predictable but much less desirable. Consumers of health care services and provincial policymakers will try to sustain existing practices by shifting costs both onto citizens in other provinces and onto the next generation. To the extent these efforts are successful, they will blunt incentives to undertake reforms that promise more lasting improvements and they will exacerbate interregional and intergenerational tensions. Canadians would do well, therefore, to look at combinations of new federal-provincial financing arrangements and pre-funding that can set the stage for more economically sensible and socially harmonious approaches to their implicit health care liability.

*Canadians would do well to look at combinations of new federal-provincial financing arrangements and pre-funding that can set the stage for more economically sensible and socially harmonious approaches to their implicit health care liability.*

### *Reforming Federal-Provincial Transfers*

In general, it seems safe to predict that, whatever else happens, demographic change will push up health care budgets. Differences in the age composition of provincial populations appear to be a significant determinant of current health spending (Rongve 2000, 11), and similar patterns are visible across countries (World Bank 1994). But the extent of the rise and its implications for the quality of public services generally and of health care in particular will depend on many things — other budget priorities, the management of the public health care system, and the maintenance of sensible boundaries between public provision and private consumption. Achievements in these areas will, in turn, depend partly on the incentives created by the way the system is funded.

### Resource Allocation

To some extent, accommodating health pressures with unchanged tax levels will require squeezing other components of provincial budgets. Commentators often point out that the elderly share of the population is an incomplete indicator of overall demographic pressure on public spending (Denton and Spencer 1996). Young people also absorb public resources. In the past, however, falling enrollment in elementary and secondary education did not produce commensurate declines in government budgets because the ratio of education workers to pupils and salaries in the educational sector

**Table 4:** ***Impact of Health Care Spending on Provincial Budgets, Various Scenarios***

| | | Base Case | | Utilization *or* Cost +0.5% Annually | | Utilization *and* Cost +0.5% Annually | | Utilization *and* Cost +0.5% Annually to 2010[a] | |
|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 2020 | 2040 | 2020 | 2040 | 2020 | 2040 | 2020 | 2040 |
| | | | | *A. Provincial Health Care Spending as a Percentage of GDP* | | | | | |
| Canada | 6.1 | 7.4 | 10.0 | 8.1 | 12.1 | 9.0 | 14.7 | 8.5 | 11.5 |
| Newfoundland | 9.5 | 12.8 | 20.1 | 14.1 | 24.4 | 15.5 | 29.7 | 14.7 | 23.1 |
| Prince Edward Island | 7.9 | 9.7 | 13.7 | 10.7 | 16.7 | 11.8 | 20.2 | 11.2 | 15.8 |
| Nova Scotia | 7.3 | 9.3 | 13.4 | 10.2 | 16.4 | 11.3 | 19.9 | 10.7 | 15.5 |
| New Brunswick | 7.4 | 9.8 | 15.3 | 10.8 | 18.6 | 11.9 | 22.7 | 11.3 | 17.7 |
| Quebec | 6.5 | 8.5 | 11.6 | 9.3 | 14.1 | 10.3 | 17.1 | 9.8 | 13.3 |
| Ontario | 5.5 | 6.5 | 8.7 | 7.2 | 10.5 | 7.9 | 12.8 | 7.5 | 10.0 |
| Manitoba | 8.2 | 9.1 | 11.7 | 10.1 | 14.3 | 11.1 | 17.3 | 10.5 | 13.5 |
| Saskatchewan | 6.5 | 7.0 | 8.8 | 7.8 | 10.7 | 8.6 | 13.0 | 8.1 | 10.1 |
| Alberta | 4.9 | 6.1 | 8.7 | 6.7 | 10.6 | 7.4 | 12.9 | 7.0 | 10.0 |
| British Columbia | 6.9 | 8.3 | 11.4 | 9.1 | 13.9 | 10.1 | 16.9 | 9.5 | 13.2 |
| Northwest Territories | 9.2 | 10.8 | 13.6 | 11.9 | 16.6 | 13.2 | 20.2 | 12.5 | 15.7 |
| Yukon | 7.0 | 10.4 | 14.9 | 11.5 | 18.1 | 12.7 | 22.1 | 12.0 | 17.2 |
| | | | | *B. Provincial Health Care Spending as a Percentage of Own-Source Revenue* | | | | | |
| Canada | 35 | 42 | 57 | 47 | 70 | 51 | 85 | 49 | 66 |
| Newfoundland | 53 | 71 | 111 | 78 | 135 | 86 | 164 | 81 | 128 |
| Prince Edward Island | 43 | 53 | 75 | 58 | 91 | 64 | 110 | 61 | 86 |
| Nova Scotia | 45 | 57 | 83 | 63 | 100 | 69 | 122 | 66 | 95 |
| New Brunswick | 37 | 49 | 76 | 54 | 93 | 59 | 113 | 56 | 88 |
| Quebec | 31 | 41 | 56 | 45 | 68 | 50 | 82 | 47 | 64 |
| Ontario | 37 | 43 | 58 | 48 | 70 | 53 | 86 | 50 | 67 |
| Manitoba | 45 | 50 | 64 | 55 | 78 | 61 | 95 | 58 | 74 |
| Saskatchewan | 36 | 38 | 48 | 42 | 58 | 47 | 71 | 44 | 55 |
| Alberta | 29 | 36 | 51 | 39 | 62 | 44 | 76 | 41 | 59 |
| British Columbia | 33 | 40 | 55 | 44 | 67 | 48 | 81 | 46 | 63 |
| Northwest Territories | 144 | 169 | 213 | 187 | 260 | 206 | 316 | 195 | 246 |
| Yukon | 47 | 69 | 99 | 76 | 120 | 84 | 146 | 80 | 114 |

*C. Present Value of Increased Provincial Health Care Spending*

| | Base Case | | Utilization *or* Cost +0.5% Annually | | Utilization *and* Cost +0.5% Annually | | Utilization *and* Cost +0.5% Annually to 2010[a] | |
|---|---|---|---|---|---|---|---|---|
| | billions of $ | % of GDP | billions of $ | % of GDP | billions of $ | % of GDP | billions of $ | % of GDP |
| Canada | 531 | 52 | 832 | 81 | 1,185 | 116 | 835 | 82 |
| Newfoundland | 12 | 92 | 17 | 131 | 23 | 177 | 17 | 132 |
| Prince Edward Island | 2 | 60 | 3 | 93 | 4 | 132 | 3 | 94 |
| Nova Scotia | 15 | 63 | 22 | 95 | 31 | 131 | 23 | 95 |
| New Brunswick | 14 | 71 | 20 | 102 | 27 | 138 | 20 | 103 |
| Quebec | 138 | 64 | 204 | 94 | 280 | 129 | 205 | 94 |
| Ontario | 190 | 45 | 310 | 73 | 451 | 106 | 311 | 73 |
| Manitoba | 13 | 41 | 25 | 76 | 38 | 116 | 25 | 76 |
| Saskatchewan | 8 | 25 | 16 | 51 | 26 | 81 | 17 | 52 |
| Alberta | 60 | 48 | 92 | 72 | 128 | 101 | 92 | 72 |
| British Columbia | 75 | 60 | 118 | 94 | 169 | 135 | 118 | 94 |
| Northwest Territories | 3 | 81 | 4 | 138 | 6 | 206 | 4 | 137 |
| Yukon | 1 | 88 | 1 | 122 | 2 | 163 | 1 | 122 |

[a] And declining monotonically to base-case values from 2011 to 2020.

Source: Author's calculations as explained in the text.

both rose. Part of the fiscal challenge for provinces will be to find greater efficiencies in other budget areas. To the extent they cannot, provincial tax rates will rise.

More positively, measures to raise economic growth rates over the long term would profoundly improve the scenarios described above. Suppose, for example, that servicing intensity and costs rise as in the base-case scenario, but wise public investments and lower, more neutral taxes improve the growth of output per working-age person 0.5 percent annually above the base-case assumption. Then the increases in the shares of provincial GDPs and revenues absorbed by health care spending over the projection period are more in line with the increases recorded since 1980. Nationwide, the implicit health care liability shrinks to about 30 percent of current GDP, and only in Newfoundland and Yukon does the ratio exceed one-half. To point out that boosting long-term growth pays huge dividends is not a new comment, but because many debates set health priorities and tax reform in opposition to each other, it bears repeating that a strong economy is the strongest imaginable support for future health care.[21]

Any given health care budget, moreover, will always have room for better allocation. The more extreme scenarios outlined above are unlikely because such adverse trends would spur efforts to get more health care services out of the people, physical capital, and technology already in the system. The idea that efficient management is a legitimate goal in health care is probably more widely accepted now than in the past. A difficult fiscal environment and the growing availability of data linking medical practice and other policies to health care outcomes have intensified the focus on getting more bang for the health care buck. Many provinces have moved to regionalized health care delivery, trying to put decisionmaking closer to citizens and patients. More systematic application of cost-benefit analysis in health-system management is possible (Donaldson, Mitton, and Currie, forthcoming). The exploding literature on the efficacy of treatment will continue to provide new insights to guide practice (Laupacis and Naylor, forthcoming).

Another possibility is that new financial arrangements within the system will induce providers to take better account of the costs of their treatments (Donaldson, Currie, and Mitton, forthcoming). Rostering arrangements for primary care that supplement or replace the current fee-for-service system with provincially mandated variations on US health maintenance organizations (HMOs) could reduce incentives to overservice and overconsume (though the penalty fees that apply to patients who switch providers under such systems might require changes to the *Canada Health Act*, and government-run HMOs would strike many as unappealing).

*It is bad policy to make all health-related goods and services free at the point of delivery and outlaw their private purchase.*

This last observation provides a suitable segue to the more contentious point that it is bad policy to make all health-related goods and services free at the point of delivery and outlaw their private purchase. Public funding of much health care consumption makes sense: adverse selection and moral hazard impede private insurance for many medical conditions; externalities and public-good characteristics justify some government investments in health; and redistribution through in-kind services can help to target intended recipients. But these considerations do not justify the hostility toward private purchase and provision evident in recent political discourse in Canada. In other markets for goods and services, consumer demand for better combinations of quality

21 Anticipating the proposal for pre-funding some of the future health liability below, the possibility that higher national saving might increase growth stands out as especially important.

and price pulls resources into more efficient uses. Prohibiting both consumption-related charges and private insurance largely eliminates these key forces from the health care system.[22]

Moreover, prohibiting care outside the public system is ultimately neither economically nor politically sustainable. As efforts to resist health care spending's rising claim on provincial budgets lengthen waiting times for some procedures, more of individual Canadians' choices threaten to become public policy issues, with decisions about diagnostic procedures, such as magnetic-resonance imaging (MRI), and treatments, such as hip and knee replacements, being determined not by the joint decision of the patient and the provider, but by the willingness of finance ministers to raise taxes and the capacity of taxpayers to pay them. A logical response to the growing pressures of the current system would be to imitate other developed democracies in allowing private transactions alongside the public health care system.

## Policymakers' Incentives

Reallocation of resources, a strong economic base, better management, and market-based reforms to the relations between providers and consumers could help to contain the fiscal pressures of an aging and health-demanding population. But the need for such changes is already well known, and it seems clear — especially in the wake of a federal election where the debate on health care was rarely better than infantile — that the incentives facing policymakers, particularly at the provincial level, are not uniformly favorable to achieving them.[23] A likely response to the fiscal pressures just described is *ad hoc* increases in federal funds for health care through the CHST, along the lines seen over the past two years, and further enrichment of the equalization program as health-care-related pressures grow in the weaker provinces. This response would be problematic.

*A problematic response to fiscal pressures would be* ad hoc *increases in federal funds for health care through the CHST and further enrichment of the equalization program as health-care-related pressures grow in the weaker provinces.*

*Ad hoc* CHST increases make media headlines look like the provincial key to the federal treasury. When additional federal funds are potentially available each year, it makes political sense for provincial health ministers faced with, say, emergency room overcrowding to devote more time and energy to blaming Ottawa and less to overseeing improvements in resource management that might steer people who do not belong in emergency rooms toward more suitable facilities. This incentive is unhelpful to the cause of getting more bang for the health care buck through better resource management.

A second disadvantage of *ad hoc* increases that has not attracted the notice it deserves is the incentive they create for provincial governments to spend new money from Ottawa as fast as possible. It was unfortunate but, in retrospect, predictable that, in the wake of the CHST supplement provided in the 1999 federal budget (money intended to be drawn down over three years), complaints about inadequate federal

22 One way of bringing more consumer pressure into the system would be to introduce co-payments. A co-payment system that respected ability to pay could, for instance, record a certain proportion of health services received as a taxable benefit on the personal income tax form (Goodman and Mintz, forthcoming).

23 The fact that the provinces are calling for more federal money at the same time that they are cutting taxes is oblique but powerful testimony to the accountability problems inherent in current arrangements.

health care funding were countered by rebuttals that the provinces had not spent every cent the moment the money was made available.[24]

A third drawback of *ad hoc* increases is that they effectively turn block grants into tied funding. Such funding distorts provincial priorities and tends — even more than does the *Canada Health Act* — to discourage innovation by giving opponents of changes in each province a federal avenue for obstructing them. Much of the incremental efficiency gain that will contain costs in the overall system will occur in the future, as it has in the past, by way of piecemeal reforms in individual provinces that are picked up across provincial borders as they demonstrate their effectiveness. Federal stick-waving for short-term political advantage — as during the debate over Bill 11 in Alberta — impedes this process.

As for equalization, the key problem is that this program claws back, dollar for dollar, increases in recipient provinces' revenues that result from increases in their tax bases, distorting provincial development priorities in ways that are unhelpful to growth (Boothe 1998, 27–28). Enriching equalization without reforming it would raise the "welfare wall" facing many provincial governments, blunting the incentives to reform tax, transfer, and labor market programs in ways that would make the challenge of higher health care costs for the elderly and a smaller working-age population easier to meet.

## The Case for a Seniors Health Grant

*What is needed is some way of making federal-provincial transfers responsive to changing demographics, while limiting the extent to which they shape provincial priorities and poison federal-provincial relations.*

The federal government could short-circuit some of these processes by devolving more tax room to the provinces, rather than endlessly increasing cash transfers. But such a step, positive though it would be, would not address the phenomenon highlighted in the projections above — that the provinces face different prospects and will experience the fiscal pressure of rising health care spending at different times. Especially since several of the provinces that will first get into trouble are among those most reliant on federal transfers, a likelier outcome is a series of *ad hoc* bailouts that further blur accountability and distort decisions at the margin. What is needed is some way of making federal-provincial transfers responsive to changing demographics, while limiting the extent to which they shape provincial priorities and poison federal-provincial relations.

Reforming part of the CHST transfer to link it explicitly to the health care needs of the older population might offer a way out of this trap.[25] The idea that the formulas that determine federal transfers ought to contain measures of provincial need is an old one, and it has been suggested that demographic considerations ought to enter the CHST

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24 For example, responding to Opposition questions in March 2000, Herb Gray (Canada 2000, March 3) said in the House of Commons:

> [W]e are still hearing names of people like Bouchard and Landry who are not interested in the sick and who have left in a bank account $800 million that could be used to provide immediate relief to the sick....[T]he first thing that should be done is for those premiers who have not spent the money which they were given by the federal government, which they could have spent last year and this year, to get on with the job and apply that money to health care.

25 I am grateful to Åke Blomqvist and Seamus Hogan for helpful discussion of these problems and potential solutions.

formula.[26] A straightforward way of responding to the demographic pressure while avoiding the incentive problems of more general needs-based formulas would be to convert part of the CHST into a grant per person age 65 and over — a "seniors health grant." In the program's initial year, assumed for illustrative purposes to be 2002, the amount could be set at $3,000 per senior.[27] It would escalate at the rate of nominal GDP growth (real growth plus inflation) per person thereafter. The other transfers to each province would continue to grow in line with GDP, as in this paper's other projections.

The extra money the seniors health grant would provide to each province would, by construction, be proportional to the growth in its elderly population. For provinces whose elderly populations grow relatively quickly, the grant would make an appreciable impact on their finances. Table 5 shows the incremental effect of the grant relative to provincial GDPs and to own-source revenues and in present-value terms in order to facilitate comparison with the implicit health care liability, under the base-case scenario (panel A) and under the alternative in which interprovincial migration continues at 1990s' levels (panel B).

*The seniors health grant would shift a little more than one-third of the implicit health care liability from the provincial governments to Ottawa.*

Under either scenario, the seniors health grant would shift a little more than one-third of the implicit health care liability — some $185 to $190 billion, equal to 18 percent of national GDP — from the provincial governments to Ottawa.[28] And under either scenario, the provinces with the most rapidly aging populations would, by design, receive the greatest benefit. In the base-case projection, the seniors health grant would provide additional amounts equal to 2 to 3 percentage points of provincial GDP and 12 to 17 percentage points of own-source revenues in the Atlantic provinces by 2040, reducing their implicit health care liabilities by some 25 to 30 percentage points of GDP. Quebec, British Columbia, and Yukon would also gain relatively more from the grant. In the alternative scenario, where interprovincial migration continues at levels typical of the 1990s, the seniors health grant would be relatively more important in sustaining health care in provinces subject to substantial out-migration. Newfoundland and Yukon would reap by far the largest benefits,[29] while Manitoba and Saskatchewan would gain some protection.

Such a block grant would be consistent with the federal government's lead role in programs related to seniors. It would also be relatively benign in its distorting effects on provincial budget priorities. Being geared to the elderly population, it would be less susceptible to the criticism that federal-provincial transfers encourage workers to locate in regions where their chances of remunerative employment are lower.[30] And unlike some other federal-provincial transfers, the seniors health grant would not create moral hazard, financially exposing Ottawa to the actions of provincial governments.

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26 See Coulombe and Mérette (2000). Bedard et al. (2000) explore in detail the potential use of age and sex, along with other indicators, in allocating health care funds within one province.

27 The amount could, of course, be set lower than $3,000, but it could not be set much higher without making the grant payable to Ontario larger than total federal transfers to that province in 2002.

28 The total amounts of the liability shifted to Ottawa under the two scenarios are not identical since interprovincial migrants contribute to the taxes of their new provincial government and draw on its health care resources at the same rates as the already resident population.

29 The lack of a figure for Yukon in 2040 (Table 5, panel B) illustrates a weakness of straight-line projections: continued out-migration at 1990s' levels would empty the territory of working-age people by 2040.

30 A problem documented by, among others, Coulombe (1999).

**Table 5:** ***Incremental Effect of the Seniors Health Grant on Provincial Health Budgets***

| | % of GDP | | % of Own-Source Revenue | | Implicit Health Care Liability | |
|---|---|---|---|---|---|---|
| | 2020 | 2040 | 2020 | 2040 | billions of $ | % of GDP |
| | *A. Interprovincial Migration Netting to Zero after Five Years* | | | | | |
| Canada | 0.5 | 1.3 | 3.0 | 7.5 | 184.9 | 18 |
| Newfoundland | 1.2 | 3.0 | 6.5 | 16.6 | 3.7 | 29 |
| Prince Edward Island | 0.9 | 2.2 | 5.0 | 12.0 | 0.8 | 26 |
| Nova Scotia | 0.9 | 2.3 | 5.5 | 14.0 | 5.9 | 25 |
| New Brunswick | 1.1 | 2.9 | 5.3 | 14.3 | 5.3 | 28 |
| Quebec | 0.8 | 1.6 | 3.7 | 7.9 | 47.1 | 22 |
| Ontario | 0.4 | 1.1 | 2.6 | 7.1 | 65.9 | 15 |
| Manitoba | 0.4 | 1.1 | 2.3 | 5.9 | 4.6 | 14 |
| Saskatchewan | 0.3 | 0.9 | 1.6 | 5.0 | 3.6 | 11 |
| Alberta | 0.5 | 1.2 | 2.7 | 7.0 | 20.2 | 16 |
| British Columbia | 0.6 | 1.5 | 3.0 | 7.2 | 27.1 | 22 |
| Northwest Territories | 0.3 | 0.6 | 4.0 | 8.7 | 0.3 | 11 |
| Yukon | 0.9 | 1.4 | 6.2 | 9.1 | 0.2 | 20 |
| | *B. Interprovincial Migration at 1990s' Levels* | | | | | |
| Canada | 0.5 | 1.3 | 3.1 | 7.6 | 188.9 | 18 |
| Newfoundland | 1.9 | 11.0 | 10.6 | 60.8 | 4.3 | 34 |
| Prince Edward Island | 0.9 | 2.1 | 4.8 | 11.4 | 0.8 | 25 |
| Nova Scotia | 0.9 | 2.5 | 5.8 | 15.2 | 6.1 | 26 |
| New Brunswick | 1.1 | 3.2 | 5.7 | 15.8 | 5.5 | 28 |
| Quebec | 0.8 | 1.8 | 3.9 | 8.9 | 48.6 | 22 |
| Ontario | 0.4 | 1.1 | 2.7 | 7.2 | 67.1 | 16 |
| Manitoba | 0.6 | 1.5 | 3.1 | 8.4 | 5.3 | 16 |
| Saskatchewan | 0.5 | 1.6 | 2.6 | 8.8 | 4.7 | 15 |
| Alberta | 0.4 | 1.0 | 2.3 | 5.8 | 19.7 | 16 |
| British Columbia | 0.5 | 1.3 | 2.6 | 6.0 | 26.2 | 21 |
| Northwest Territories | 0.3 | 0.7 | 4.6 | 10.3 | 0.4 | 11 |
| Yukon | 10.7 | n.a. | 68.7 | n.a. | n.a. | n.a. |

Note: Both scenarios assume fertility rates remain at 1997 levels.

Source: Author's calculations as explained in the text.

## *Pre-Funding*

Efforts to shift costs among generations are rarely seen for what they are. But they are not more defensible or conducive to sound policy than are efforts to shift costs among regions.

Prolonged and powerful upward pressure on provincial health care budgets is foreseeable. The range of projections outlined in the first section of this paper indicates uncertainty about the precise magnitude of the fiscal challenge, but no one can doubt the direction. In that regard, the challenge is no different from others — such as paying down regular debt or ensuring the sustainability of the CPP/QPP — that have recently stirred debate and prompted action. But the parallels between familiar fiscal challenges

and the implicit health care liability have not yet been explored adequately. A possible solution worthy of attention is pre-funding part of future health care costs by paying down debt or, more ambitiously, creating a new account in which to save.

## Drawbacks of Pay-as-You-Go

*The principal motivation for pre-funding future fiscal obligations is to ensure that each generation's contribution to the cost of public programs is not unconscionably out of line with the benefits it receives.*

The principal motivation for pre-funding future fiscal obligations is to ensure that each generation's contribution to the cost of public programs is not unconscionably out of line with the benefits it receives. When the growth rate of the economy is higher than the return on saving, as was the case during the immediate postwar period, the prospect that future taxpayers will be a richer revenue source than current taxpayers may justify some redistribution toward present consumption through fiscal deficits, unfunded pension plans, and pay-as-you-go health care for the elderly. These approaches look less wise when, as has been more typical historically and is currently the case, economic growth rates are lower than returns on saving. Since the current prospect of lower growth in the future owes much to the baby boomers' failure to raise children — to invest in human capital — in the numbers their forebears did, it is reasonable to expect them to provide relatively more financial and physical capital to support the economy from which they expect to draw benefits in their old age (Sinn 1999).

Expressing the present value of increased health care spending as a ratio to current GDP draws attention to one useful response: more saving in the near term to provide assets that will generate income and can be drawn down later. At the limit, suppose a government wished to sustain current age-adjusted health care utilization patterns and allow the increases in total spending projected in the base case to take place, but wanted to insulate current tax rates from those increases. It would need a stock of income-yielding assets equal to the base case's present-value liabilities. Ontario, for example, could allow health care spending to rise as projected over a period equal to the average life expectancy of its current population while maintaining current tax rates if it had a $190 billion nest egg yielding a 6 percent return to cover the difference; Quebec would require a nest egg of $138 billion.

Building up stocks of assets that big sounds preposterous, but most Canadian provinces are heavily indebted, and paying down debt with budget surpluses would have exactly the same effect as asset building. Either building up positive net worth or shrinking net public debt would improve the net flow of interest payments and receipts in provincial budgets as the requirements of the health care budget mounted.[31] Although using surpluses to completely offset the liability is not a realistic option for some provinces whose health care budgets look particularly likely to grow, all provinces could make some near-term progress in reducing other debt.[32]

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31 From the point of view of the country as a whole, the efficacy of this proposal depends on whether provincial surpluses result in additions to national net worth. It is possible that some changes in government sector saving would be undone by offsetting changes in private saving. On the whole, however, completely offsetting responses look unlikely. If private agents were indeed able to pierce the government veil and adjust their own saving to offset undesired changes in saving that governments were doing on their behalf, Canadian households would have built up stocks of assets against unfunded liabilities represented by the health care and pension systems. But it is hard to argue that such assets exist.

32 One study of Ontario's situation (Conference Board of Canada 2000) concludes that meeting the increased demands of public health care spending from now until 2020 would absorb all the budget...

Turning this possibility into action would, however, require changes in the thrust of much provincial government thinking. Paying down debt with budget surpluses is typically seen as conflicting with the objective of providing more resources to health care, rather than as a prelude to it. And in the wake of a successful concerted effort to talk more money out of Ottawa, the near-term emphasis in provincial capitals is on more health care spending.[33] The effects of the current economic boom and higher federal transfers, both actual and prospective, are likely to prompt increases in spending that will make substantial surpluses less likely when economic growth returns to a more sustainable pace.

## The Case for a Seniors Health Account

If governments, either federal or provincial, find it difficult to pay down debt and build up assets in the face of increasing demands for current health care spending, an interesting possibility is to combine the two ideas just mentioned: a reform to the CHST that would establish a seniors health grant, and pre-funding that would provide the resources with which to pay for it.

The federal government has already created special accounts in order to backdate additional CHST spending that will actually flow to the provinces over time, a practice that is open to criticism for deliberately distorting Ottawa's bottom line (Robson 1999). Pre-funding the seniors health grant would involve a more transparent scheme to take in and pay out funds over a longer period — a strategy analogous in some respects to the reforms that are now partially pre-funding future benefits in the CPP.

*Pre-funding the seniors health grant would be a strategy analgous to the reforms that are now pre-funding future benefits in the CPP.*

To continue with the example of the seniors health grant provided above, imagine that the federal government created a trust fund — the "seniors health account" — that would cover the incremental cost of the grant. Ottawa would make annual payments indexed to growth in nominal GDP into the account and withdraw from it amounts equal to the difference between payments under the seniors health grant and the CHST transfers that would otherwise have been made.[34]

One can imagine setting up such a fund to cover the period while the baby-boomer bulge is exerting its greatest pressure on health care budgets, with the fund first building and then declining to zero around mid-century, but that approach would set up an awkward fiscal transition as support from the account ran down. A more durable approach would be to imitate the arrangements of many social security systems, including the CPP, and target a stable ratio of fund assets to annual disbursements over the long term.[35] Suppose that, like the reformed CPP, the seniors health account aimed

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Note 32 - cont'd.

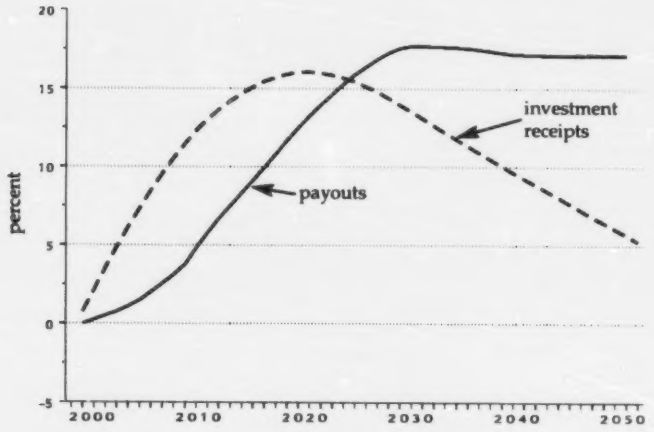
...room freed up as balanced budgets lower the share of spending absorbed by interest payments. Robson and Scarth (1997) and King and Jackson (2000) also stress the importance of reducing debt to insulate budgets from the impact of higher future health care spending.

33 The question of how and why increased transfers translate into spending in the areas to which they are notionally directed is a complicated one. Rongve (2000, 13) finds that a rise of $1 in federal transfers produces an increase of 12 to 18 cents in provincial health care expenditures.

34 As noted earlier, the assumption here is that federal-provincial transfers otherwise grow at the same rate as GDP.

35 The illustration here assumes that the stream of payments serving as the denominator of the funding ratio is the incremental cost of the seniors health grant — that is, the difference between the grant and...

**Figure 9:** ***Contribution of Proposed Seniors Health Account to Public Health Care Spending on Population 65+***




Source: Author's calculations.

for an assets-to-disbursements ratio of five. If the mid-century mark was used as a benchmark for the long term and the first payment into the account were made this year, annual payments into the account would need to be a little less than two-thirds of a percentage point of GDP — around $6.7 billion in the first year — to ensure that its assets were five times larger than the incremental cost of the seniors health grant in 2050.[36]

This amount of money is not small — but Canada's implicit health care liability represents a sizable hole in its long-term fiscal outlook, and pre-funding along these lines would go a long way to fill it. By the time the pressure of the baby boomers on health care budgets reaches its greatest intensity, in the late 2020s, payouts from the seniors health account — which at that point would roughly equal its investment earnings — would cover about one-sixth of the projected provincial health spending on people age 65 and over, an appreciable lightening of the burden that would otherwise confront taxpayers (Figure 9).

Now that the federal budget is showing surpluses well in excess of the annual amounts proposed here for pre-funding, setting aside an amount roughly equal to one-quarter of GST revenue to fund health care for an aging population might be politically salable.

## Concluding Comment

Canadians should use the current period of robust economic growth and relaxed fiscal constraints to prepare for a future in which funding public health care is likely to be more difficult. Although reallocating funds from elsewhere in budgets and within the system and improving the incentives that health care providers and consumers face would go part way toward meeting the challenge of demographic change, the scale of

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Note 35 - cont'd.

...the CHST funding that would have existed without it. A less logically consistent approach, but one that the public might find more intuitive and policymakers might find easier to sell, would be to aim for a funding ratio relative to total seniors health grant payments. The total grant in 2050 would be roughly twice as large as the incremental cost, but because of the long pre-funding period, the additional annual contribution to achieve the higher funding ratio would be proportionately much smaller. Pre-funding the entire grant would require contributions of just under 0.7 percent of GDP — $7.4 billion in the first year.

36 Imitating the CPP in this respect would have the virtue of building on a familiar model, but it would also create a problem. The CPP defines stability in the funding ratio as a ratio that is the same 63 years after the actuarial evaluation as it is 13 years after. Since the CPP's funding ratio peaks between these two dates, most scenarios envision it hitting the latter benchmark in the course of a decline, which, were it to occur, would satisfy no one's definition of stability at that time (Robson 2000, 16–18). Similarly, the funding ratio of the seniors health account would be declining in 2050, and maintaining a target of five in subsequent years would require some remedial action before that date.

the projected increases in health care budgets is large enough to prompt questions about Canada's current approach to national health care financing.

Reforming federal-provincial transfers by repackaging a portion of the CHST as a per senior grant that grows with the older population of each province would create a system that would be more robust in the face of the pressures that aging will put on different provinces. And pre-funding the amount by which the new grant exceeds transfers under the status quo would limit the extent to which pay-as-you-go financing of health care services to seniors adds to the intergenerational burdens of Canada's public finances.

The proposals made in this paper for a seniors health grant and a seniors health account would be compatible with many other reforms to Canada's public health care system. The key virtue of the grant and the account would be their contribution to an environment in which other reforms would be easier. This contribution would be twofold. First, the two changes would reduce the tendency for provincial governments to shift costs onto each others' taxpayers and for federal and provincial policymakers to blame each other, rather than attend to their respective responsibilities. And second, by making part of the implicit liability of future health care spending more explicit in the present, they could make it less onerous in the long run.

As the calculations in the first half of this *Commentary* illustrate, Canadians face an immense challenge in making their health care system sustainable while the baby boomers depend on it. But reforms to federal-provincial transfers and pre-funding of easily foreseeable costs could put the country in much better shape to deal with it.

## Appendix: Projection Methods

Following are some details on the sources and assumptions I used in constructing the scenarios described in the text.

### Population

I took historical population figures by age and sex from census-based data to 1999 (CANSIM matrixes 6214 through 6225). To produce projections to 2040, I used PMEDS-D (see note 6) with the following assumptions:

- Total fertility rates in each province and territory remain at their 1997 levels through the projection period in the base case; in some alternative projections, the provincial and territorial fertility rates converge to the national average over a five-year period.
- Age-specific mortality rates decline throughout the projection period at the same rate they fell from 1971 to 1991. The implication is increases in life expectancy at birth for males from 74.6 years in 1991 to 81.1 years by 2041 and for females from 80.9 to 86.0 years over the same period.
- Immigration to Canada and emigration from it and the distribution of immigrants and emigrants among provinces are the same proportion of respective resident populations each year as they were, on average, from 1991 to 1999.
- Net interprovincial migration goes, in equal annual steps, from the 1999 figure to zero over five years and stays at zero thereafter in the base case. In some alternative projections, the average number of migrants in and out of each province is held constant at its average for the 1990s. In all cases, the 1992–97 age-sex composition of interprovincial migration is maintained through the projection period.

Statistics Canada produces age-sex population projections for the provinces to 2026. The base-case PMEDS-D projections are not markedly dissimilar to Statistics Canada's number 2 scenario (medium fertility and interprovincial migration assumptions) after adjustments to reflect the later start date for the PMEDS-D projections. For no province do these differences produce changes in the 2020 ratios of health care spending to own-source revenue that are more than 5 percentage points higher or lower than those of the base-case scenario (the differences for the territories are larger).

### Provincial Economies and Budgets

The figures for provincial GDPs are derived from Statistics Canada's Provincial Economic Accounts to 1999, with estimates for 2000 from various forecasts. I then pro-rated the provincial figures to match the national totals in the most recent National Income and Expenditure Accounts.

Historical data on total provincial health care spending and on spending by age and sex are from the Canadian Institute for Health Information (2000, tables B.4.1 and E.6.1). All historical and future estimates of spending by age and sex assume that relative per capita amounts are the same in all years. Conversions to and from constant dollar amounts use the implicit price deflator for government consumption given in the same source (appendix table B.1).

Provincial revenues and their composition are from the Provincial Economic Accounts through 1998. I updated the numbers on the basis of public accounts data and Department of Finance estimates of entitlements for equalization and CHST transfers[38] and then pro-rated so that the totals match the most recent data on aggregate provincial revenues and federal-provincial transfers from the National Income and Expenditure Accounts. Provincial net debt figures are on a Financial Management System basis, with estimates for fiscal year 1999/2000 based on public accounts data.

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The C.D. Howe Institute is an independent, nonprofit, research and educational institution. Its goals are to identify current and emerging economic and social policy issues facing Canadians; to analyze options for public and private sector responses; to recommend, where appropriate, particular policy options that, in the Institute's view, best serve the national interest; and to communicate the conclusions of its research to a domestic and international audience in a clear, nonpartisan way.

The Institute was created in 1973 by a merger of the Private Planning Association of Canada (PPAC) and the C.D. Howe Memorial Foundation. The PPAC, formed in 1958 by business and labor leaders, undertook research and educational activities on economic policy issues. The Foundation was created in 1961 to memorialize the late Rt. Hon. Clarence Decatur Howe, who served Canada as Minister of Trade and Commerce, among other elected capacities, between 1935 and 1957. The Foundation became a separate entity in 1981.

The Institute encourages participation in and support of its activities from business, organized labor, associations, the professions, and interested individuals. For further information, please contact the Institute's Membership Coordinator.

The Chairman of the Institute is Kent Jespersen; Jack M. Mintz is President and Chief Executive Officer.